REMARKS

Applicants affirm the election of claim 35-43 without traverse made telephonically on March 20, 2003. Claims 1-34 are being prosecuted in divisional applications. Accordingly, applicants have canceled claims 1-34. Claims 35-45 are currently pending in the present application. Claims 35-43 have been rejected. Claim 35 has been amended. New claims 44 and 45 have been added. Applicants respectfully request reconsideration of the outstanding rejections based upon the foregoing amendments and following remarks.

Claims 35 and 36 stand rejected under 35 U.S.C. §102 as being anticipated by Hayes '902, Hayes et al., Hieber or the Hayes et al. article. Claim 43 stands rejected under 35 U.S.C. §102 as being anticipated by Hayes '902. Claim 35 has been amended.

Claim 35 recites a method of fabricating a flip chip semiconductor die. The method includes "depositing a solder material on each of a plurality of connection sites". The "diameter of each said deposited solder material is about 10 microns or less". Claims 36 and 43 depend from claim 35.

Hayes '902 describes a method of depositing solder material with diameters in a range of "about twenty (20) μm to about two hundred (200) μm" (Column 4, lines 12-13). Hayes et al. describes a method of depositing solder material with diameters in a range of "25 μm to 200 μm" (Column 4, line 39). Hieber describes a method of depositing solder material with diameters in a range of "about 60 to80 μm" (Column 2, lines 25-26). The Hayes article describes a method of depositing solder material with diameters in a range of "25-125 μm" (Introduction, line 7).

None of the cited references teaches or discloses depositing solder material with diameters in a range of "about 10 microns or less". Thus, claims 35, 36 and 43 cannot be anticipated by the cited references. The importance of solder deposited in diameters of 10 or less microns cannot be understated. By depositing smaller solder droplets, the solder can be more densely packed to accommodate increased wiring levels in semiconductor packages. None of the cited references suggests that their disclosed methods are capable of depositing solder material with diameters in a range of "about 10 microns or less".

Claims 37-42 stand rejected under 35 U.S.C. §103 as being unpatentable over Hayes '902, Hayes et al., Hieber or the Hayes et al. article in combination with Hayes '757. Claims 37-42 depend from claim 35.

The arguments provided above regarding the rejection of claims 35, 36 and 43 are equally applicable here. Hayes '757 is relied upon as teaching the use of multiple heads to form different solder coating. Hayes '757 fails to add any relevant teaching regarding the size of the solder material deposited. Thus, the cited references, either alone or in combination, fail to teach or suggest depositing solder material with diameters in a range of "less than about 20 microns".

New claims 44 and 45 have been added. The new claims are fully supported by the specification as originally filed, and no new matter has been introduced in these new claims. Claims 44 and 45 add important features which further distinguish those claims from the cited references.

Applicants believe that each of the presently pending claims are in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Dated: June 10, 2003

Respectfully submitted,

By: _____

Thomas J. D'Amico
Registration No. 28,371
William E. Powell, III
Registration No. 39,803
DICKSTEIN SHAPIRO MORIN &
OSHINSKY, LLP
2101 L Street, NW
Washington, DC 20037-1526

Attorneys for Applicants

VERSION WITH MARKINGS TO SHOW CHANGES MADE

Cancel claims 1-34.

35. (Amended) A method of fabricating a flip chip semiconductor die, comprising depositing a solder material on each of a plurality of connection sites, wherein the diameter of each said deposited solder material is [less than] about [100] 10 microns or less.

44. (New) The method of claim 35, wherein a pitch between respective ones of said deposited solder material is less than about 100 microns.

45. (New) The method of claim 44, wherein a pitch between respective ones of said deposited solder material is less than about 25 microns.